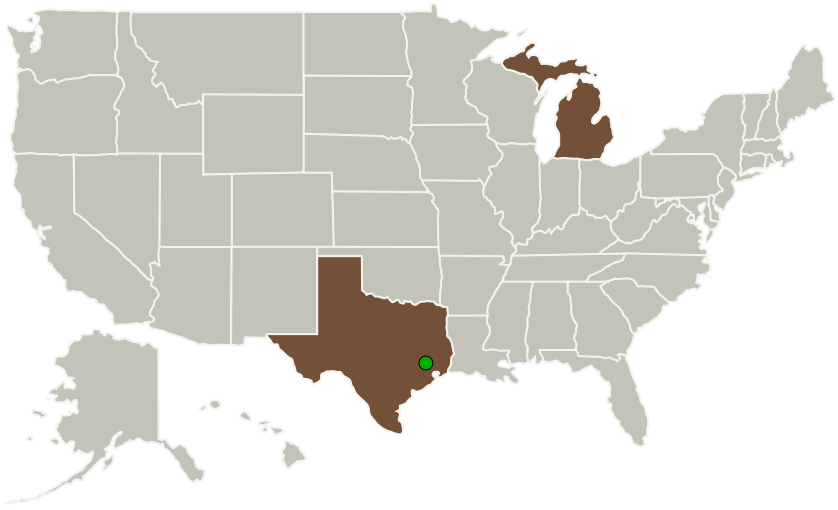
Advanced Electrochemical Oxidation Cell for Purification of Water, Phase I

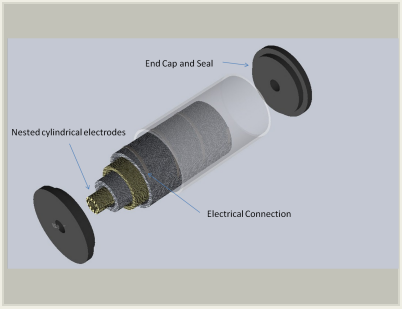
Completed Technology Project (2013 - 2013)

Project Introduction

Vesitech, Inc. has developed a totally new class of water treatment technology utilizing novel carbon based electrodes that have been shown to electrochemically produce advanced oxidation (AO) species in-situ in contaminated water. Depending upon the electrode formulation and configuration, the species produced include ozone, hydrogen peroxide, superoxide, and hydroxyl radicals, all of which are effective in destroying a wide range of toxic chemical compounds and microbial contaminants in potable water. This technology has been proven effective in the disinfection of NSF Type I and Type II water. The device is very compact, effective, and energy efficient (< 3watts). Residual hydrogen peroxide can be produced in sufficient quantities to provide a residual effect and inhibit the formation of bio-films. These advanced oxidation electrodes represent a new platform technology which will enable effective, inexpensive, and energy efficient treatment designs for point-of-use potable water treatment systems

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Vesitech, Inc	Lead Organization	Industry Small Disadvantaged Business (SDB), Women-Owned Small Business (WOSB)	Hancock, Michigan
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Michigan	Texas

Project Transitions

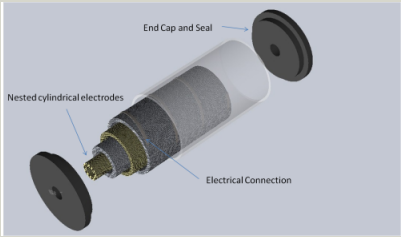
May 2013: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137956)*

Images



Project Image
Advanced Electrochemical Oxidation Cell for Purification of Water
(https://techport.nasa.gov/image/129876)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Vesitech, Inc

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

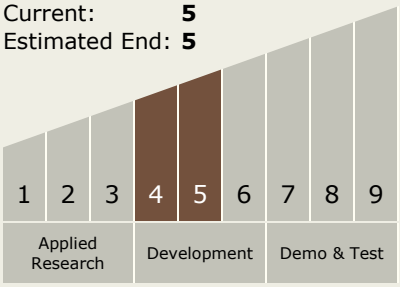
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Janet Metsa

Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
    - TX06.1.2 Water Recovery and Management

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System